



Astrophysics in the US Virgin Islands

*An Enduring Legacy to Neil Gehrels'
Committment to Diversity and Inclusion*



Université Fédérale



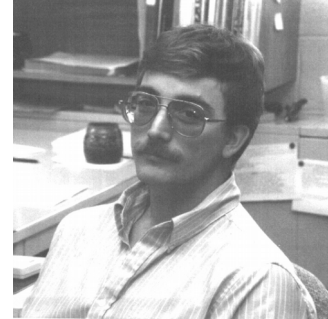
David Morris
University of the Virgin Islands

Gehrels Memorial Meeting, National Academy of Sciences, Washington DC, May 21-22, 2018

Collaborators



David Morris (UVI):
Role: Physics program
lead; Observatory
Director;



James Neff (CofC):
Role: VIRT installer and
research collaborator



Brice Orange (OWIS):
Role: Observatory
Operations Manager



Timothy Giblin (USAF):
Role: VIRT installer and
research collaborator



Bruce Gendre (UVI):
Role: VIRT resident
astronomer



Dave Smith (UVI):
Role: Physics professor

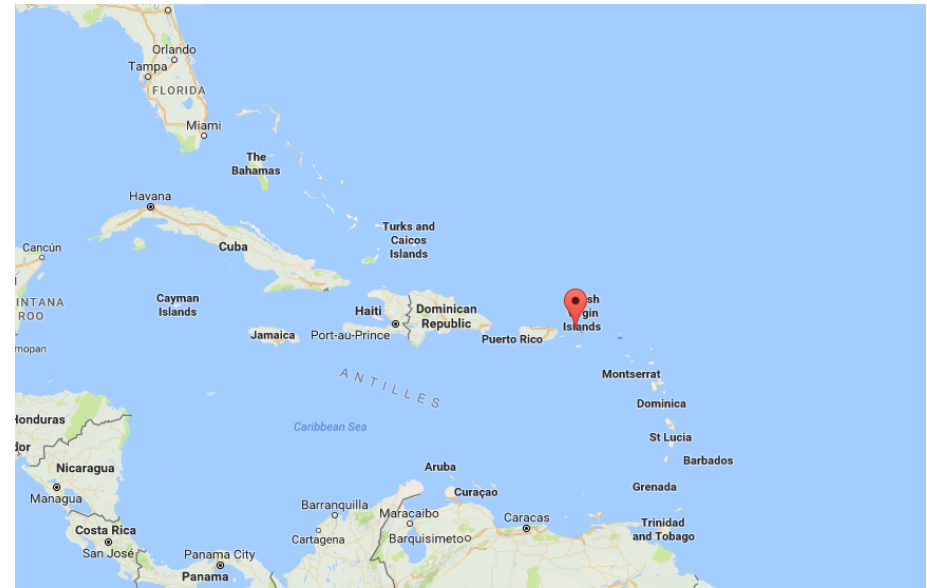


Nino Cucchiara (UVI):
Role: Physics professor



Don Drost (UVI-retired):
Role: Physics professor

The University of the Virgin Islands



- Located at the border between the Caribbean sea and the Atlantic Ocean
- HBCU Founded in 1962 (as CVI: 2-yr school)
- Campuses on St. Thomas and St. Croix
- ~2300 students
- Primarily USVI students (75%) with some US mainland and other Caribbean nationals
- Traditional majors of nursing, business, biology; recently engineering and physical science



The Etelman Observatory

HARRY ETELMAN'S 'HOBBY'

Amateur 'Sky-Gazer' Building Bonne Resolution Observatory

A large, domed astronomical observatory — it's 15-inch "eyepiece" mounted on a revolving turn-table to permit a full, 360 degree range of view — is nearing completion at Estate Bonne Resolution.

It's 5-inch reflector and astrophotograph — the latter for photographing the heavens — and other modern, sky-scanning apparatus, make it the largest private observatory in the entire Caribbean area. The dome, sheathed in silvery aluminum, rises above a quarter-mile land elevation in the northerly quadrant of the Island, and forms a connection with the new residence of its owner. The entire setting commands a magnificent panorama alike of the Atlantic and the Caribbean. The observatory is a part of the hill-cresting Estate Bonne Resolution home of Mr. and Mrs. Harry Etelman of Charlotte Amalie and Tenafly, N. J. The Etelmans have been in and out-of-season residents here over the past half-dozen years.

Installation of observatory equipment was by the firm of J. W. Ficker, Pittsburgh, a division of the American Optical Company, perhaps the oldest and best known American manufacturers of astronomical equipment. When completed, the Etelman observatory will form an outlook on the heavens to complement other college and private observation. The main "eyepiece" weighs in at 1½ tons.

Etelman, a graduate chemist and formerly in the chemical manufacturing business, stresses his "amateur" status as "sky-gazer."

"I have only amateur interest

finding us, since the roadway is one of a series of sharp inclines and curves which I and my neighbor, Al Hofstaedter, have arranged to have partly concreted."

Photographic equipment and supplies fashion a part of the installation of the Bonne Resolution observatory. This permits Etelman to make records of astral phenomena he may find.

He shrugs off the possibility of finding any "new stars" but feels his amateur interest will add to the great body of astronomical knowledge being gathered throughout the world. The chance of finding any "new stars" he says, is so remote as to be all but a one-in-a-million occurrence.

"But I can assure you they are distinct and separate groups, and this is no reflection on the AA. The triple A organization works in collaboration with many of the nation's great observatories, comparing notes and findings, if any, and constitutes a non-professional arm of this scientific field.

"When my observatory is completed, and it should be ready in the fall, I expect to spend a great deal of my time there, evenings and nights, since the location provides an all-but entirely clear view of the heavens over Charlotte Amalie, including both the North Star and the Southern Cross. The location, I feel, is advantageous of the study and recording of phenomenon of the skies in a sector of the hemisphere where there are not too many other outlook posts."

That the pursuit of his amateur hobby is expensive is indicated by the costs of observatory construction and the outlay for paraphernalia, but Etelman is reluctant, publicly, to set any figure. He emphasizes it is a private "hobby," and that the observatory isn't a public one and, consequently, not open to the public generally.

"In fact," he adds, "those unacquainted with the Island might have a rather difficult time of

INDEX

Sports 15 & 16
Editorials 7
Women's 6
Business 12
Classified 12
Comics 13

THE Daily News

OF THE VIRGIN ISLANDS

The only independent Virgin Islands newspaper serving the people of the Virgin Islands

37th Year CHARLOTTE AMALIE, VIRGIN ISLANDS FRIDAY, JANUARY 20, 1967 No. 108715 10¢

WEATHER

Partly cloudy. Winds east 15 to 20 miles an hour, with gusts to 30. Small craft warnings in effect. Yesterday's high 84, low 71.

Stevens Recommends 'Rollback' In Wage Bill

V.I. College Given Home, Observatory

Dr. Lawrence C. Wanlass, president of the College of the Virgin Islands, has announced that the college has acquired the Bonne Resolution property on St. Thomas of Harry I. Etelman and his wife, Elizabeth.

The property includes a modern 10-room residence, an observatory with a 16-inch telescope, and approximately seven acres of land. This facility will be known as the Etelman Astronomical Center of the college.

In his announcement, Dr. Wanlass declared:

"The college is most grateful to Mr. and Mrs. Etelman for their generous co-operation in the transfer of their St. Thomas property to the college.

"The observatory will be used for classes in astronomy, and the other facilities may be used for

(See COLLEGE, Page 6)

Urges Further Study On V.I. PayScales First

The "surprise" directive from the United States Department of Labor which earlier this week boosted wages of domestic workers to \$148 per month may be "rolled back" for 90 days pending further study of economic conditions and wage scales in the islands, if a recommendation of V.I. Commissioner of Labor Melville Stevens is acted upon favorably by the Washington department.

Employment Security chief Mrs. Louise Scott and Stevens appeared before

(See STEVENS, Page 5)

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THE THATCH ROOF of the patio bar at Estate Carillon hotel stands prominently as the new resort entered the tour market with a formal opening recently. Some 800 guests inspected the \$2.5 million resort built by Swiss Chalet, Inc. of Puerto Rico.

(Daily News Photo)

"With imaginative planning and programming, this new unit of the college can become a significant extension of our educational service to the community."

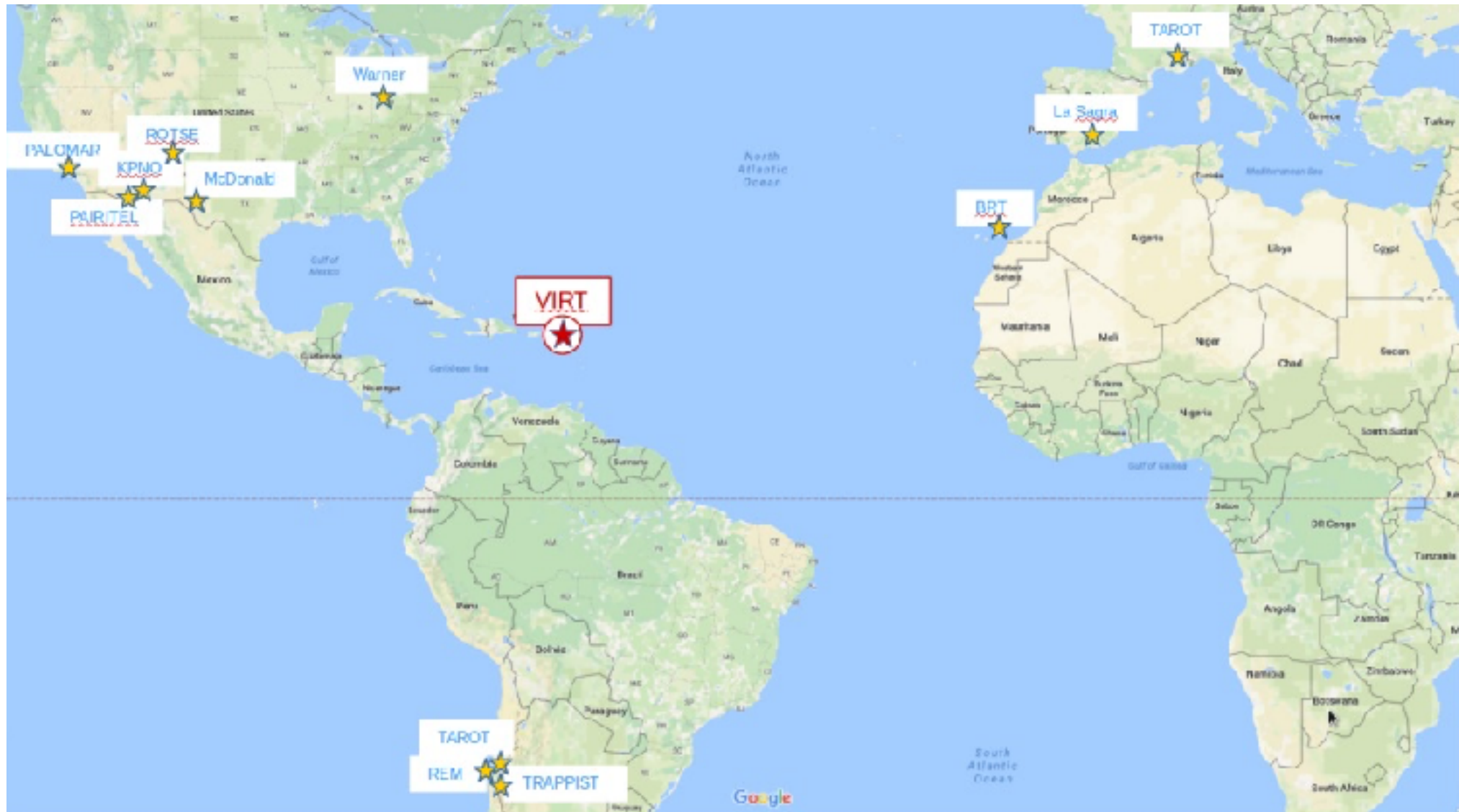
20th century Etelman Observatory



Installation of VIRT: 2003

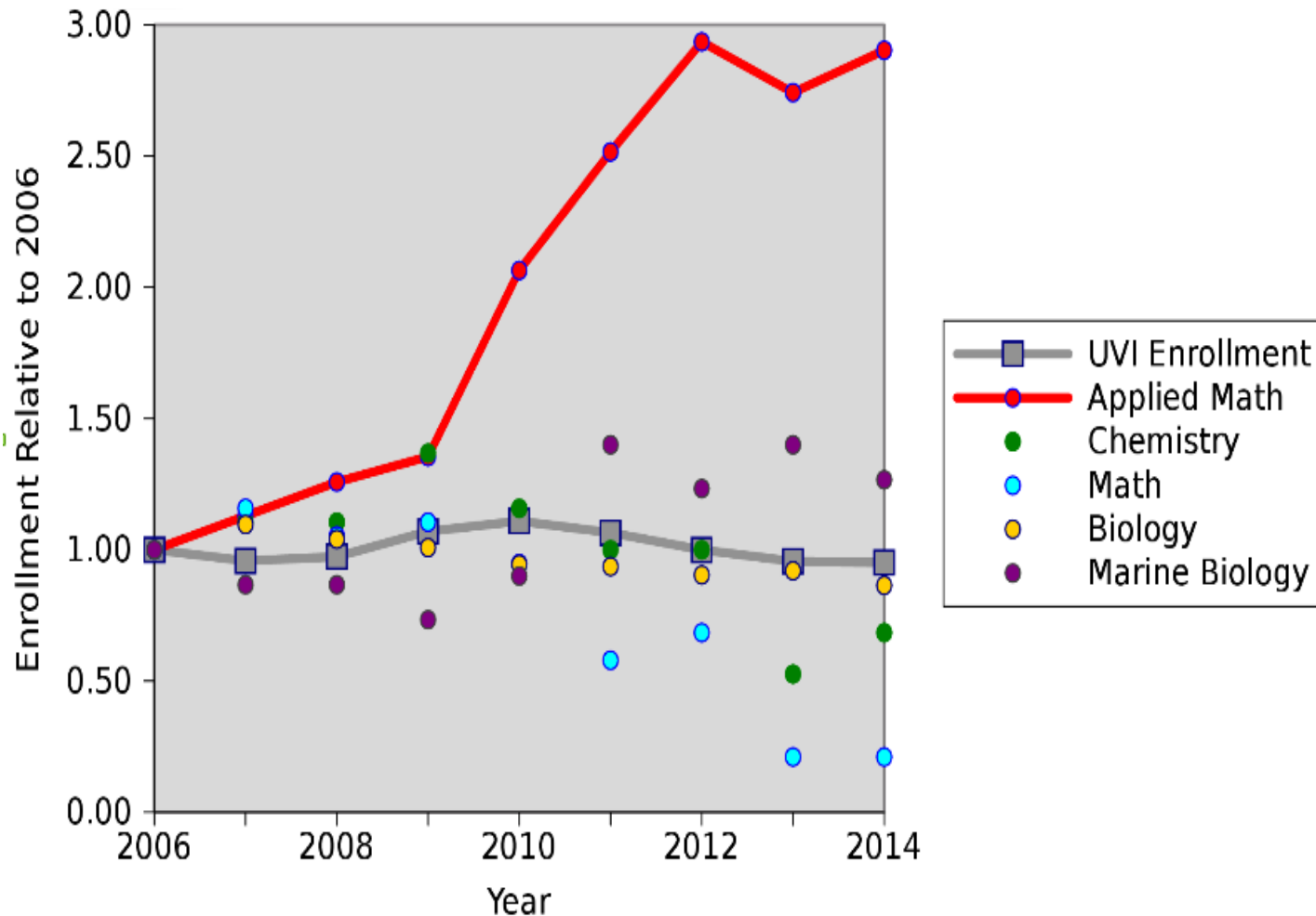


Robotic telescopes around the world



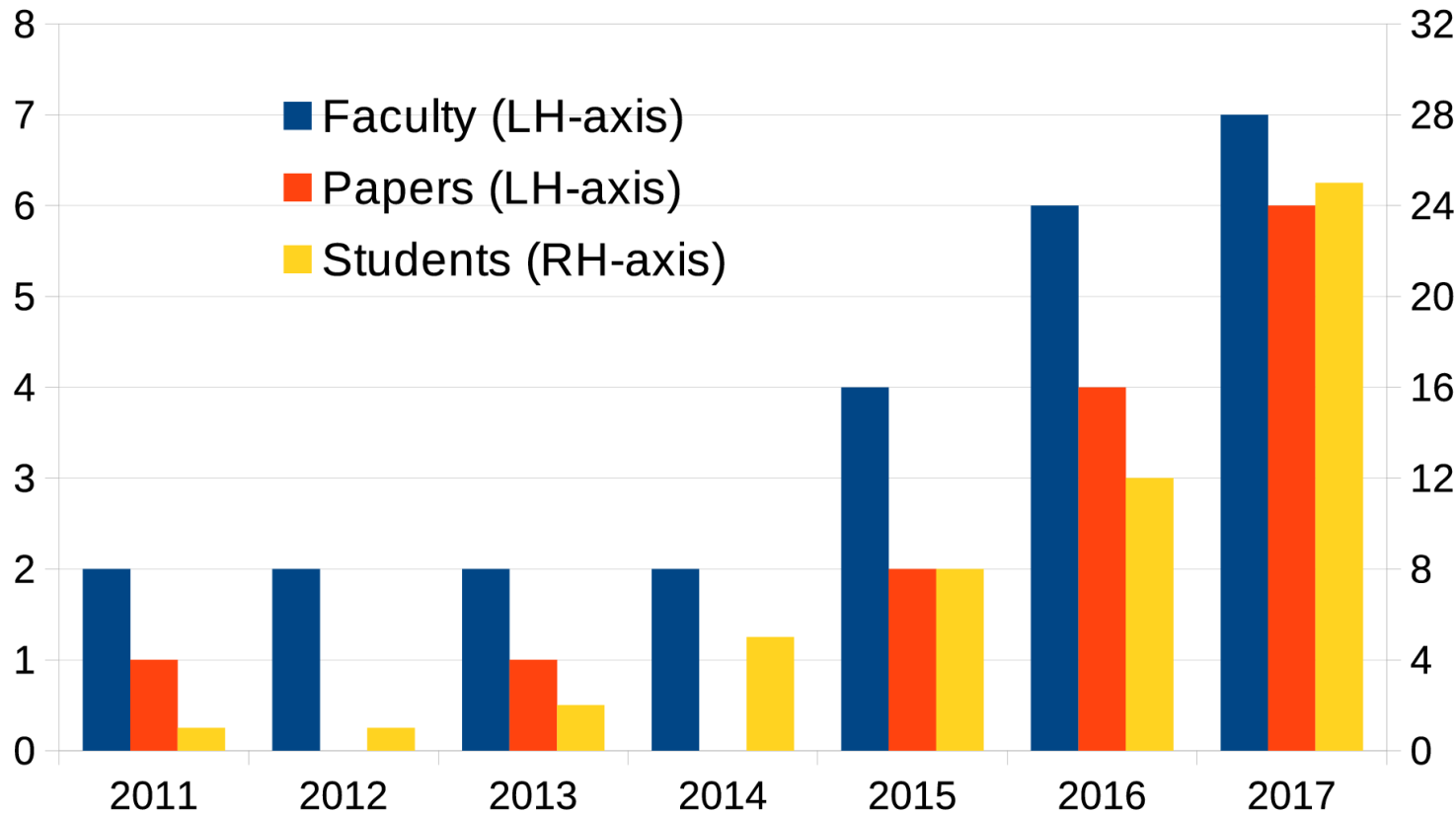
- Opportunity in ~2000 to fill “gap” in world-wide follow-up of transients – particularly *Swift*
- But personnel turnover and technical challenges constrained progress in the 2000’s

Why Physics At UVI



- In 2015, we began a 4-yr B.S. in physics degree program at UVI
- First physics BS at UVI and one of just a handful of physics programs at HBCUs around the country

Impact of new personnel – on students



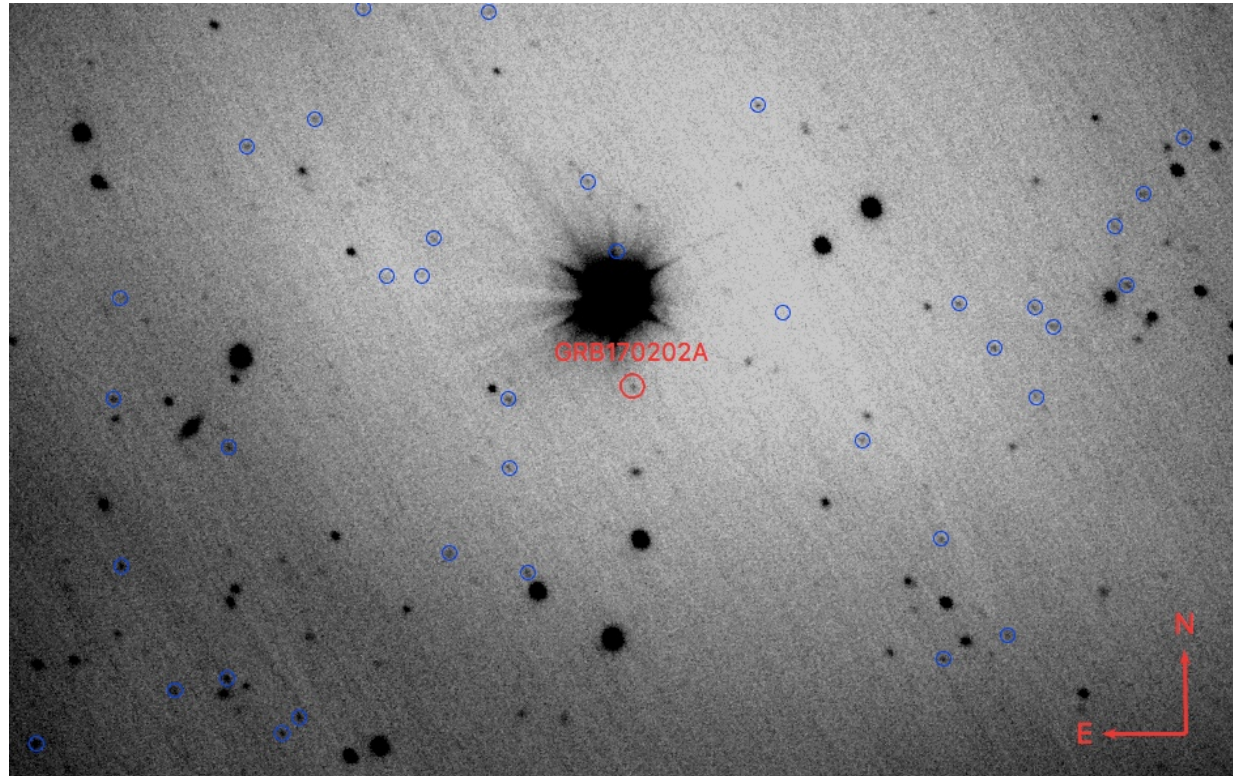
Prior to 2015, the Observatory had always been operated by a single astronomer who also was a full-time teaching faculty at UVI

2015/02 Observatory manager/Software Scientist hired

2015/04 Resident Astronomer/Robotization Scientist hired

2016/09 Two additional GRB researchers hired

VIRT's first GRB



TITLE: GCN CIRCULAR
NUMBER: 20598
SUBJECT: GRB 170202A: Etelman Observatory optical observations
DATE: 17/02/03 22:24:51 GMT
FROM: Bruce Gendre at ASDC <bruce.gendre@gmail.com>

B. Gendre (UVI), N. Orange (OrangeWave Innovative Science, LLC), D. Morris (UVI), A. Cucchiara (UVI), D. Drost (UVI), T. Giblin (USAF Academy), J. Hakkila (College of Charleston), A. Klotz (IRAP), J. Neff (NSF), D. Smith (UVI), J. Staff (UVI), P. Thierry (Auragne Observatory), R. Watlington (UVI), and L. Wentlent (UVI) report:

We observed the field of GRB 170202A (Racusin et al. GCN 20575) with the 0.5m Virgin Island Robotic Telescope (VIRT) on February the 3rd, starting at 3:16 UT (8.8 hours after the trigger), until 10:30 UT. We performed a series of exposures in the clear filter. The weather conditions were variable with a typical estimated seeing of 2".

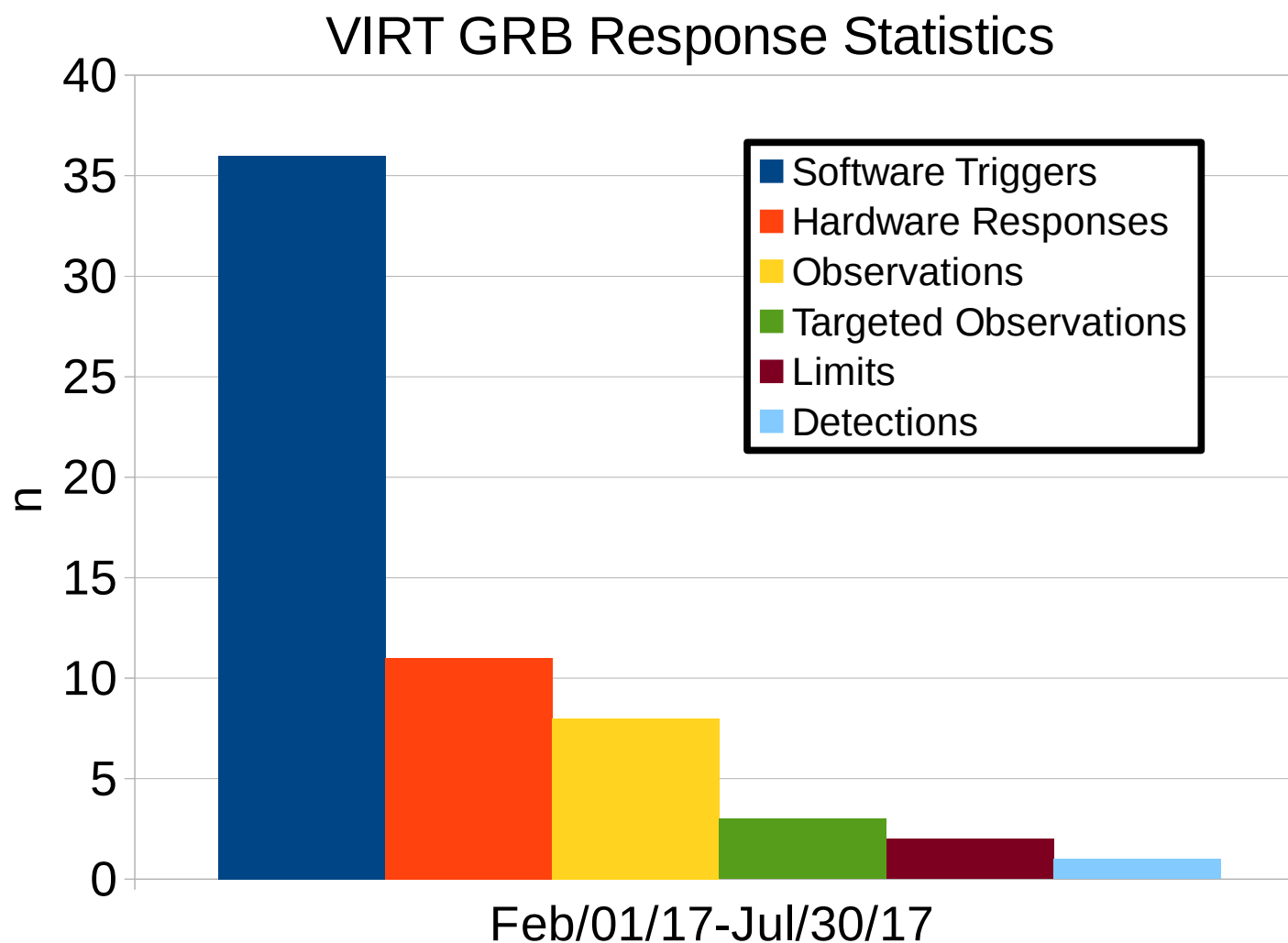
We detected the afterglow observed by UVOT (Racusin et al., GCN 20575) on a combined image (spanning times from 10h to 11.92h after the trigger). Its magnitude, estimated by comparison to nearby USNO-B1 stars, was $R = 20.8 \pm 0.3$.

Further analysis is in progress.

Magnitudes have not been corrected for Galactic extinction. The VIRT is still in its commissioning phase.

This message can be cited.

VIRT GRB followup statistics



Since start of engineering run (12-2016 to 07-2017):

36 GRB triggers received by software

All 36 successfully responded to by software

11 slewed to by the VIRT

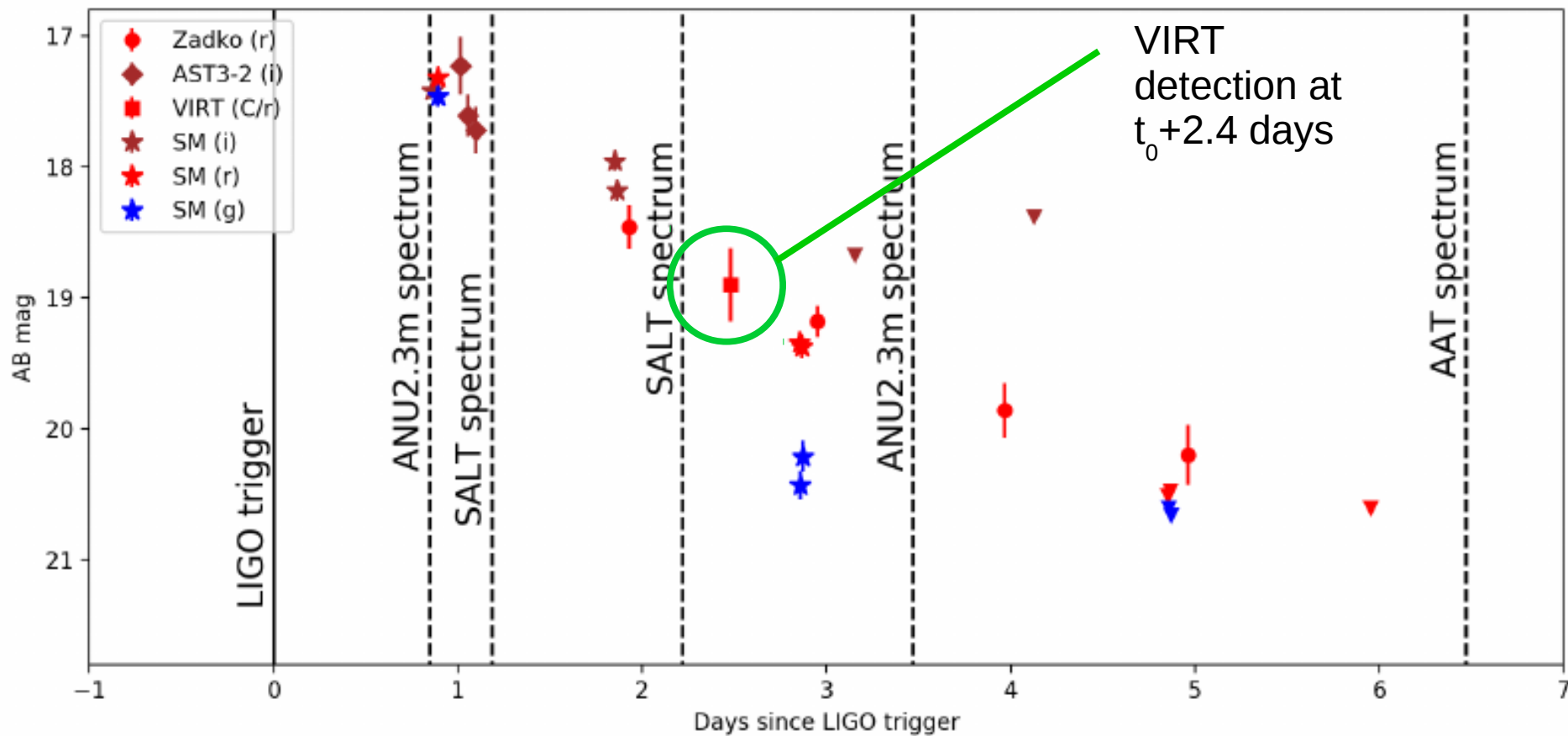
8 VIRT observations on-sky

3 successful pointed observations

2 upper limits

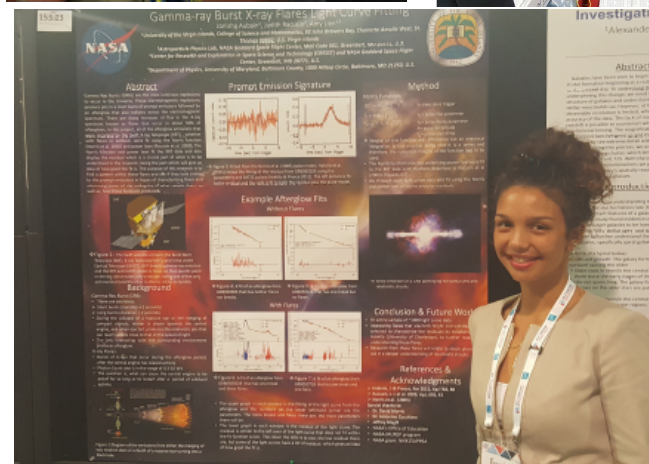
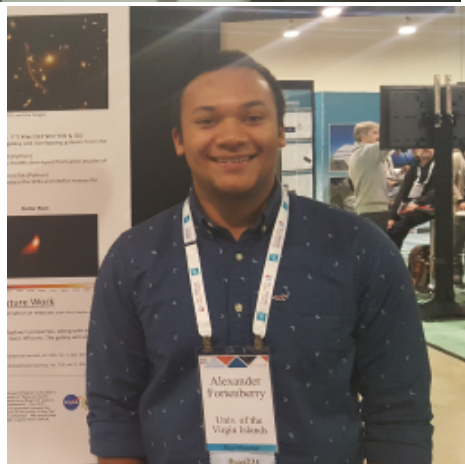
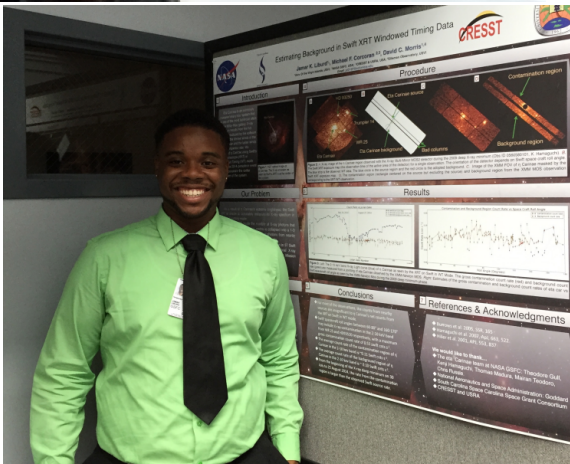
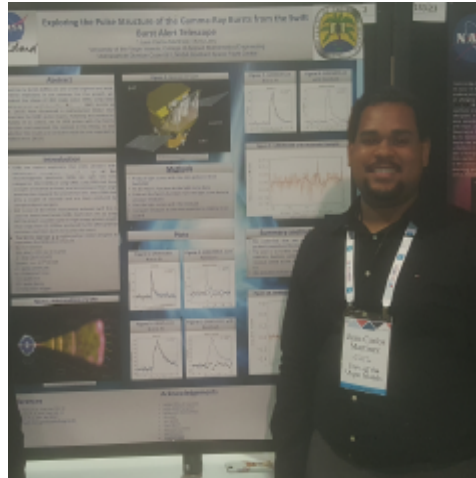
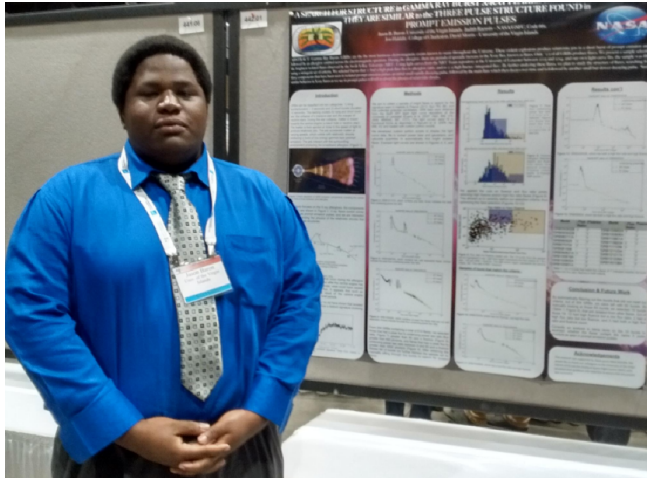
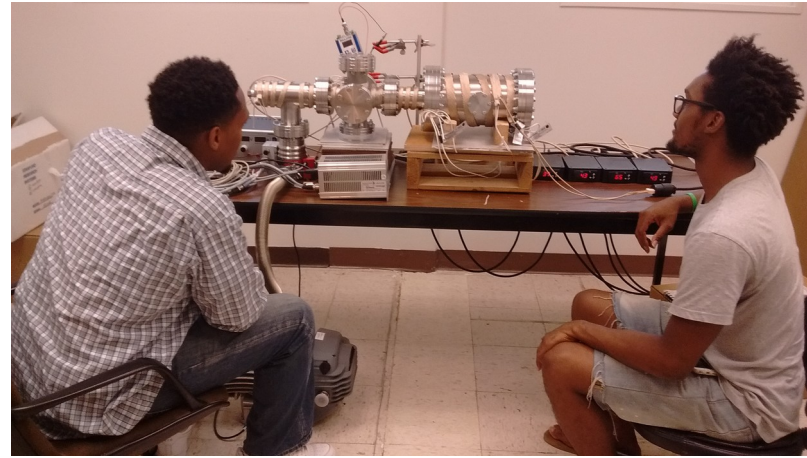
1 detection

VIRT followup of GW170817



Andreoni et. al., 2017

Students in the USVI are now introduced to astrophysics and the beauty of the Universe because of Neil Gehrels' commitment to diversity and support of the next generation



2017 Astrophysics Conferences at UVI

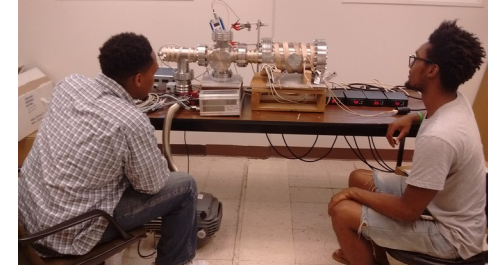
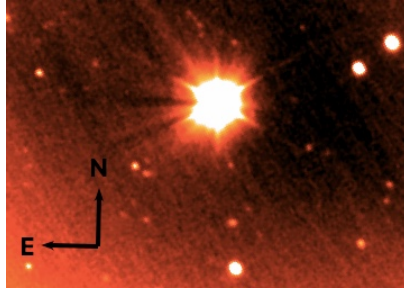


Generation-GW: Diving Into Gravitational Waves
June 5-9, 2017



Unveiling the Physics Behind Extreme AGN Variability
July 10-14, 2017

Physics at UVI



The UVI Physics program is a testament to Neil's support of young scientists and his belief in the importance of diversity and inclusiveness